



# Uncomplicating Diabetes: Reducing the Burden of Diabetes- Related End-Organ Injury

February 25–March 1, 2018 | Eldorado Hotel & Spa | Santa Fe, New Mexico | USA

## Scientific Organizers:

**Mark E. Cooper**, Monash University, Melbourne

**Thomas M. Coffman**, NUS Duke Singapore, Singapore

**Matthias G. von Herrath**, Novo Nordisk/La Jolla Institute for Allergy and Immunology, USA

**Susan Quaggin**, Northwestern University, USA

*Joint with the meeting on **Vascular Biology and Human Diseases: From Molecular Pathways to Novel Therapeutics***

*This Keystone Symposia conference will address diabetic complications which remain the major cause of morbidity and mortality in the diabetic population. Although the outlook has improved over the last two decades with respect to diabetic vascular disease, these complications remain a major burden with the underlying explanation for these complications at a molecular and cellular level as yet not fully clarified. With recent advances in the management of diabetes, particularly new classes of glucose-lowering agents, it is critical to determine if these new therapies have both glucose-dependent and independent effects in reducing diabetes-related end-organ injury. With major advances in our understanding of key pathological features of diabetic complications such as angiogenesis, fibrosis, inflammation and vascular remodeling, albeit in non-diabetic contexts, now is the time to translate this new knowledge to the field of diabetic complications. By learning from and recruiting such researchers into the field of diabetic complications, there is a great opportunity to develop novel, highly innovative approaches to identify new targets in order to discover new ways to treat, reverse or prevent diabetic complications that lead to premature atherosclerosis, heart failure, blindness, cognitive impairment and end-stage renal disease.*

## Session Topics:

- New Treatments in Diabetes
- Lipids and Diabetic Complications
- Endothelial Metabolism and Neurovascular Crosstalk (Joint)
- Mitochondria and Diabetic Complications
- Genomics and Epigenomics in Diabetic Complications
- Oxidative Stress and Diabetic Complications
- Inflammation, the Vasculature and Diabetic Complications (Joint)
- Vasoactive Hormones in Diabetic Complications

**Scholarship Application & Discounted Abstract Deadline: November 13, 2017**

**Abstract Deadline: November 28, 2017**

**Discounted Registration Deadline: December 20, 2017**



Note: Scholarships are available for graduate students and postdoctoral fellows and are awarded based on the abstract submitted. Submitting an abstract is an excellent opportunity to gain exposure for your work. Abstracts submitted by the abstract deadline will also be considered for short talks on the program.

Meeting Hashtag: #KSdiabetes  
[www.keystonesymposia.org/18J7](http://www.keystonesymposia.org/18J7)

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# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## Uncomplicating Diabetes: Reducing the Burden of Diabetes-Related End-Organ Injury (J7)

Scientific Organizers: Mark E. Cooper, Thomas M. Coffman, Matthias G. von Herrath and Susan Quaggin

Sponsored by Novo Nordisk A/S

## Vascular Biology and Human Diseases: From Molecular Pathways to Novel Therapeutics (J8)

Scientific Organizers: Elisabetta Dejana, Anne C. Eichmann and Gavin O. Thurston

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Abstract & Scholarship Deadline: November 16, 2017 / Abstract Deadline: November 28, 2017 / Discounted Registration Deadline: December 20, 2017

### SUNDAY, FEBRUARY 25

#### Arrival and Registration

### MONDAY, FEBRUARY 26

#### Welcome and Keynote Address (J7)

**Steven E. Kahn**, VA Puget Sound Health Care System and University of Washington, USA  
*Current Management of Type 2 Diabetes*

#### Welcome and Keynote Address (J8)

**Kari K. Alitalo**, University of Helsinki, Finland  
*Therapeutic Potential of Vascular Growth Factors*

#### New Treatments in Diabetes (J7)

**Daniel J. Drucker**, Lunenfeld-Tanenbaum Research Institute, Canada  
*GLP-1-Mediated Reduction in Complications of Diabetes*

**Volker Vallon**, UC San Diego & VA San Diego Healthcare System, USA  
*SGLT2 Inhibition – Insights from Experimental Studies*

**David Cherney**, University of Toronto, Canada  
*SGLT2 Inhibition: Renal Effects in Man*

#### Short Talk(s) Chosen from Abstracts

#### Vascular Growth Factors: Biological Relevance and Therapeutic Application (J8)

**Michael Simons**, Yale University, USA  
*Cell Type Specificity of FGF/TGF Signaling*

**Lena Claesson-Welsh**, Uppsala University, Sweden  
*Phosphatases in Vascular Permeability and Angiogenesis*

**Shahin Rafii**, Weill Cornell Medical College, USA  
*Angiocrine Functions of Endothelial Cells*

#### Short Talk(s) Chosen from Abstracts

#### Lipids and Diabetic Complications (J7)

**Svati H. Shah**, Duke University Medical Center, USA  
*What Can We Learn from Metabolomics?*

**Katalin Susztak**, University of Pennsylvania, USA  
*Lipids and Renal Tubular Injury in Diabetes*

**Weier Qi**, AstraZeneca, Sweden  
*Human Proteomics to Therapeutics for Diabetic Nephropathy - The 50-Year Joslin Medalist Study*

#### Short Talk Chosen from Abstracts

#### Vascular Growth Factors: Receptors and Biological Role (J8)

**Gou Young Koh**, Institute of Basic Science, South Korea  
*Tie2 Activating Antibody "ABTAA" for Micro-vascular Diseases*

**Gavin O. Thurston**, Regeneron Pharmaceuticals Inc., USA  
*Endothelial Heterogeneity and Response to Anti-Vascular Therapy*

**Luisa Iruela-Arispe**, University of California, Los Angeles, USA  
*Critical Signaling Nodes in Vascular Homeostasis*

#### Short Talk Chosen from Abstracts

#### Poster Session 1

### TUESDAY, FEBRUARY 27

#### Endothelial Metabolism and Neurovascular Crosstalk (Joint)

**Peter F. Carmeliet**, University of Leuven, VIB, Belgium  
*Endothelial Cell Metabolism and Therapeutic Interventions*

**Susan Quaggin**, Northwestern University, USA  
*Therapies on the Horizon of Diabetic Kidney Disease*

**Anne C. Eichmann**, Yale University School of Medicine, USA  
*Neurovascular Cross Talk and Possible Pathological Implications*

**David L. Silver**, Duke-NUS Medical School, Singapore  
*Brain Lipid Transport*

#### Short Talk(s) Chosen from Abstracts

#### Mitochondria and Diabetic Complications (J7)

**Richard J. Youle**, NINDS, National Institutes of Health, USA  
*General Overview on Mito Maven*

**Chengxue Helena Qin**, Baker IDI Heart and Diabetes Institute, Australia  
*Role of Endogenous Annexin-A1 in the Cardiovascular Response to Diabetes*

**Farhad Danesh**, MD Anderson, USA  
*Mitochondrial Reprogramming in Diabetic Nephropathy*

#### Short Talk Chosen from Abstracts

#### Regulation of Endothelial Cell Differentiation in Development and Tissue Regeneration (J8)

**Didier Stainier**, Max Planck Institute for Heart and Lung Research, Germany  
*Vascular Development in Zebrafish*

**Taija Mäkinen**, Uppsala University, Sweden  
*Mechanisms of Lymphatic Vessel Formation from Progenitors of Different Origins*

**Hellmut G. Augustin**, DKFZ & Heidelberg University, Germany  
*Epigenetic Regulation Vascular Maturation*

#### Short Talk Chosen from Abstracts

#### Poster Session 2

### WEDNESDAY, FEBRUARY 28

#### Genomics and Epigenomics in Diabetic Complications (J7)

**Eske Willerslev**, University of Copenhagen, Denmark  
*What We Can Learn from State of the Art Genomics?*

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**Mark I. McCarthy**, University of Oxford, UK

*Using human genetics for biological insight and translational advantage*

**Thomas M. Coffman**, NUS Duke Singapore, Singapore

*Genetic Mechanisms of Diabetic Kidney Disease in Mouse Models*

**Assam El-Osta**, Baker IDI Heart Research Institute, Australia

*Epigenetics of Diabetes and its Complications. Beyond Epiphenomenon?*

**Short Talk(s) Chosen from Abstracts**

### Molecular Basis of Vascular Diversity (J8)

**Ralf H. Adams**, Max Planck Institute for Molecular Biomedicine, Germany

*Organ-Specific and Functional Specialization of Blood Vessels*

**Costantino Iadecola**, Weill Cornell Medicine, USA

*The Diversity of the Brain Microcirculation in Health and Disease*

**Britta Engelhardt**, Theodor Kocher Institute/Universität Bern, Switzerland

*Specialized Brain Barriers Establish the Immune Privilege of the CNS*

**Stefan Liebner**, Klinikum der Johann Wolfgang Goethe-Universität, Germany

*Role of Astrocyte-derived Wnt Growth Factors for Endothelial Blood-brain Barrier Maintenance*

**Short Talk(s) Chosen from Abstracts**

### Oxidative Stress and Diabetic Complications (J7)

**Patrick J. Pagano**, University of Pittsburgh, USA

*ROS in Vascular Phenotypic Switching and Disease, Target Nox!*

**Karin Agnes Maria Jandeleit-Dahm**, Monash University, Australia

*The Role of Reactive Oxygen Species in Diabetic Complications*

**Kumar Sharma**, University of California, San Diego, USA

*Mitochondrial ROS: Friend or Foe?*

**Short Talk Chosen from Abstracts**

### Brain Vascular Pathology (J8)

**Christer Betsholtz**, Uppsala University, Sweden

*The Establishment and Dysfunction of the Blood Brain Barrier*

**Elisabetta Dejana**, Uppsala University, Sweden

*Transcriptional Regulation of the Blood Brain Barrier in Health and Disease*

**Berislav Zlokovic**, University of Southern California, USA

*Vascular Contribution to Alzheimer's Disease*

**Short Talk Chosen from Abstracts**

### Poster Session 3

### THURSDAY, MARCH 1

#### Inflammation, the Vasculature and Diabetic Complications (Joint)

#### Speaker to be Announced

**Andrew J. Murphy**, Baker Heart Research Institute, Australia

*Hematopoietic Progenitor Cells in Diabetic Complications*

**Lois E H Smith**, Boston Children's Hospital/ Harvard Medical School, USA

*Glucose and Lipid Metabolism in Retinopathy*

**Israel F. Charo**, ChemoCentryx, Inc., USA

*Targeting CCR2 for Treatment of Renal Diseases*

**Short Talk(s) Chosen from Abstracts**

### Vasoactive Hormones in Diabetic Complications (J7)

**Ariela Benigni**, IRCCS - Istituto di Ricerche Farmacologiche Mario Negri, Italy

*Regeneration of Kidney Vasculature by Angiotensin II Antagonism: New Insights*

**Susan Gurley**, Duke University, USA

*Angiotensin II: Tissue-Selective Effects*

**Merlin Thomas**, Monash University, Australia

*Novel Interactions of RAGE with GPCR Receptors*

### Hemodynamics and Endothelial Pathology (J8)

**Martin Schwartz**, Yale School of Medicine, USA

*Endothelial Fluid Shear Stress Responses in Vascular Remodeling and Atherosclerosis*

**Naoki Mochizuki**, National Cerebral and Cardiovascular Center Research Institute, Japan

*The Vascular Cell Response to Flow*

**Tatiana V. Petrova**, CHUV and University of Lausanne, Switzerland

*Endothelial Cell Responses to Biomechanical Forces in Lymphatics*

### Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (J7)

### Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (J8)

### FRIDAY, MARCH 2

#### Departure